

CLAIMS

1 1. A transceiver, comprising:
2 a transceiver port for receiving and transmitting high
3 data rate communication signals at radio frequency;
4 automatic frequency controlcontrol circuitry for
5 adjusting the received radio frequency communication signals
6 to a specified frequency channel;
7 down conversion circuitry coupled to the transceiver port
8 coupled to receive the output of the automatic frequency
9 control circuitry, the down conversion circuitry for down
10 converting received radio frequency communication signals to
11 base band frequency communication signals;
12 low pass filtering circuitry coupled to receive down
13 converted frequency signals from the down conversion
14 circuitry, the low pass filtering circuitry for removing a DC
15 offset and low frequency interference;
16 high pass filtering circuitry coupled to receive down
17 converted frequency signals, the high pass filtering circuitry
18 for filtering interference signals that are at a frequency
19 range that is higher than a specified frequency channel (the
20 down converted base band channel);
21 dual received signal strength indication circuits for
22 measuring power levels of signal and interference;
23 and variable gain amplification circuitry.

1 2. The transceiver of claim 1 wherein the automatic
2 frequency controlcontrol circuitry comprises signal generation
3 circuitry that provides phase shift keyed signals.

1 3. The transceiver of claim 2 wherein the phase shift
2 keyed signal generation circuitry comprises quadrature phase
3 shift keyed signal generation circuitry.

1 4. The automatic frequency control circuitry of claim 1
2 coupled to receiver port of the transceiver and to adjust the
3 LO frequency to the desired RF channel.

1 5. The transceiver of claim 1 wherein the high pass
2 filtering circuitry and variable gain amplification circuitry
3 are combined to form high pass variable gain amplifier
4 circuit.

1 6. The transceiver of claim 1 further comprises an up
2 converter for converting base band signals to RF signals for
3 transmission from the transceiver.

1 7. The transceiver of claim 1 further including RC
2 calibration circuitry to automatically tune the on-chip
3 channel selection low pass filters.

1 8. A transceiver, comprising;
2 a transceiver port for receiving and transmitting radio
3 frequency communication signals;
4 an automatic frequency control circuit for adjusting the
5 center frequency of a received RF signal;
6 circuitry for down converting the received RF signal; and
7 circuitry for removing a DC offset and low frequency
8 interference.

1 9. The transceiver of claim 8 further including dual
2 received signal indication circuits, which dual received
3 signal indicator circuits are for measuring received signal
4 power and received signal and interference power.

1 10. The transceiver of claim 8 further including high
2 pass variable gain amplification circuitry.

1 11. The transceiver of claim 10 further including a
2 second high pass variable gain amplifier circuit.

1 12. The transceiver of claim 11 further including a
2 third high pass variable gain amplifier circuit.

1 13. The transceiver of claim 8 wherein the automatic
2 frequency control circuitry includes quadrature phase shift
3 keyed signal generation circuitry.

1 14. The transceiver of claim 8 wherein the automatic
2 frequency control circuitry receives base band quadrature
3 signals and produces an adjusted LO signal output from a local
4 oscillator.

1 15. The transceiver of claim 8 further including filter
2 circuitry for removing a DC offset.

1 16. The transceiver of claim 8 further including filter
2 circuitry for removing low frequency interference.

1 17. The transceiver of claim 8 further including an up
2 converter for up converting base band signals to radio
3 frequency signals for transmission from the transceiver port.

1 18. The transceiver of claim 8 further including RC
2 calibration circuitry for automatically tuning the on chip
3 filters.

1 19. A method in a high data rate communication
2 transceiver comprising:

3 receiving and amplifying wideband or high data rate radio
4 frequency communication signals;

5 adjusting the LO frequency to align with the received RF
6 signals;

7 down converting the received signals from the RF to base
8 band; and

9 applying the down converted signals to low pass filters
10 and amplifiers.

1 20. The method of claim 19 wherein the applying step
2 removes the DC offset.

1 21. The method of claim 19 wherein the applying step
2 removes low frequency interference.

1 22. The method of claim 19 further including the step of
2 sensing the power level of the received signals.

1 23. The method of claim 19 further including the step of
2 sensing the power level of the received signals and
3 interference.

1 24. The method of claim 19 further including the step of
2 setting a first amplification level based upon a ratio of
3 signal-to-signal and interference power levels.

1 25. The method of claim 24 further including the step of
2 setting a second amplification level based upon a ratio of
3 signal-to-signal and interference power levels.

1 26. The method of claim 25 wherein the first and second
2 amplification levels, when summed, provide a right amount of
3 amplification.

1 27. The method of claim 19 further including the step of
2 receiving center channel frequency information from a pilot
3 signal and determining a difference between the received RF
4 frequency and the desired frequency.

1 28. The method of claim 27 wherein the difference is
2 determined by measuring an actual center frequency for the
3 received signal.

1 29. A transceiver, comprising:
2 frequency control circuitry;
3 filtering circuitry; and
4 multiple high pass variable gain amplifier circuits
5 coupled to receive the output of the filtering circuitry
6 wherein the filtering circuitry removes low frequency
7 interference and a DC offset and wherein the high pass
8 variable gain amplification circuits provide signal
9 amplification.

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1 30. The transceiver of claim 29 wherein the frequency
2 control circuitry includes circuitry for measuring a center
3 channel frequency and for determining a difference between the
4 measured center channel frequency and a specified center
5 channel frequency.

1 31. The transceiver of claim 29 further including signal
2 generation circuitry for generating quadrature phase shift
3 keyed signals.

1 32. The transceiver of claim 29 further including a
2 mixer for producing local oscillator output signals at a
3 specified frequency.